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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,045	09/13/2002	Hsu-Feng Ho	MTKP0019USA	2582

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NAIPO (NORTH AMERICA INTERNATIONAL PATENT OFFICE)
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EXAMINER

KINKEAD, ARNOLD M

ART UNIT PAPER NUMBER

2817

DATE MAILED: 11/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/065,045	HO ET AL.	
	Examiner	Art Unit	
	Arnold M Kinkead	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
P riod for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-15 and 21-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30-38 is/are allowed.
- 6) ☒ Claim(s) 1-6,8,10-15,21-27 and 29 is/are rejected.
- 7) ☒ Claim(s) 9 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 07-30-03.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

The examiner has reconsidered the claim limitations previously objected to (claims 7-9, and 16) and has determined that the Nogawa reference does apply to those limitations.

Claim Objections

1. Claim 10 is objected to because of the following informalities: on line 2, " the output signal" should be – the oscillation signal--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,2,3,4,5,6,8, 10-15,21-27, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Nogawa(US 6,154,071 of record).

1. The reference by Nogawa discloses a phase locked loop(see figures 4 and 10) comprising, as shown in figure 4, a phase comparator/detector(101) for receiving an input signal(reference/reproduction signal) and feedback from the Voltage Controlled Oscillator(106) connected between a low pass filter(105) and the phase detector(101). A charge pump(104) is shown connected to the phase detector(101). Note the phase error signals are passed to the pump via the mask gate(" signal reshapen"). As shown in figure 10,

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the period of a pulse(phase error signal)(UP/DOWN signal input(s) to the mask gate is lengthened/increased(see UP/DOWN pulse period after masking gate circuit(" reshaper"). AS noted in col. 11, lines 48-54, a frequency comparator/detector(inherently sends a frequency difference to charge pump) may be required in cases where the input reference frequency is a lot higher than the VCO output(feedback).

2. As noted in col. 5, lines 1-30, the mask circuit is active only when frequency locking(synchronizing the VCO output with a new target frequency) and thus causes the charge pump to output the required current for synchronization to occur rapidly(the phase error signal is " reshaped " at this time.) Otherwise the PLL will function in normal mode without any reshaping of the phase error signal output(matching operation occurs.)Inherent to the operation outlined in part 2, the reshaper will be active when the output of the VCO is lower(in a lower range) than the target frequency, or if it is higher(in a higher range) than the target frequency. This is when the PLL still has not locked to the target frequency. The normal mode(unreshaped) error signal not capable of synchronizing the target and output frequencies.(see col 1, lines 5-8 and col. 5, lines 1-27). EFM input signal waveform is shown in figure 6.

3. It is to be noted that the charge pump will source or sink an amount of current(i.e., the current magnitude/amplitude),dependent on the duty cycle of the " reshaper" output, which is then smoothed by the loop filter. This is inherent. As noted in the background, col. 1, lines 5-10, the PLL is part of a reproduction circuit , " controller" for reproducing data from a disk.

Allowable Subject Matter

3. Claims 9 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 30-38 are allowed.

The examiner could not find fair suggestion in the prior art for the controller for controlling the pump and reshaper(claims 9,28 and 30).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnold M Kinkead whose telephone number is 703-305-3486. The examiner can normally be reached on Mon-Fri, 8:30 am -5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on 703-308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7724 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Arnold M Kinkead
Primary Examiner
Art Unit 2817